

# State of Alaska

## Erosion Management Policy

### **Introduction**

Erosion threatens individual structures, roads, airports, utility infrastructure and in some locales, entire communities (city, village, subdivision) can be at risk. This policy concerns state-funded and state pass-through funded construction. Other entities in Alaska who construct erosion control structures, or propose development near coastal waters or rivers, are encouraged to consider the following siting, design, and construction policies.

Special Appropriations by the Legislature have been the primary method of funding most (nonfederally funded) erosion control structures (bulkheads, sea walls, rock revetments, etc.). No State of Alaska departments have authority to build erosion control structures, or to maintain already constructed erosion control structures, intended to protect privately owned facilities, roads or land.

This is intended as general policy. State agencies are encouraged to develop their own more detailed guidance related to state actions adjacent to water bodies.

### **Policies**

1. Before constructing erosion control measures, state agencies should analyze nonstructural alternatives, such as relocating threatened structures, and if consistent with law, proceed with the option that has the greatest benefit for the least cost.
2. State funded projects should not cause adverse erosion effects to adjacent (unprotected) properties or habitat.
3. Erosion control structures should not be built to protect minimally used or vacant land.
4. New structures should be located so that erosion control is not likely to be needed within the structure's design life. If such structures are at risk of erosion loss/damage, the cost of erosion safeguards should be considered.
5. The cause of the erosion problem (water, ice, wind, current, waves, thermal degradation, precipitation, seepage), and factors that increase or accelerate erosion (such as gravel removal, boat wakes, shoreline vegetation removal) should be identified before alternative solutions are proposed.
6. Erosion control projects should be sited and designed using appropriate engineering principles. Consideration should include, but not limited to:
  - Design life of a specified project, or survivability to a specified level or event (e.g. 1 percent flood, base flood elevation, 30-year, 60-year project design life, piling depth necessary to withstand scour).
  - Performing an analysis to determine rate of erosion, then avoid building in area that would erode in life of building.

- Provide erosion control protection as part of the project development.
7. A state-funded erosion control project shall include stamped drawings designed by a registered engineer in Alaska. The completed structure must conform to these design drawings.
  8. Communities with structural erosion control measures, or erosion-prone areas, should be encouraged to incorporate appropriate flood risk and erosion mitigation planning considerations into local comprehensive plans, ordinances, and subdivision approvals.
  9. Communities which receive state funds for erosion protection should be encouraged to prepare an erosion (and if appropriate, flood) mitigation plan, and land use regulation(s) to prevent losses and to guide development in high-risk erosion and flood-prone areas.
  10. To the extent practical, and consistent with state law, priority for state funds for erosion hazards should be given to communities which have an erosion (and if appropriate, flood) mitigation plan, or land use regulation(s) indicating measures are being taken locally to prevent future losses and development in high risk erosion areas.
  11. If the state finds building, platting, land use regulations within the affected jurisdiction(s) are inadequate and therefore have added substantially to the magnitude of a state declared disaster, public recovery assistance should be limited to a disaster loan until essential changes in such regulations are adopted.

### **Erosion Assessment**

An erosion assessment should be performed if major state-funded development is proposed on property adjacent to a body of water. Examples of acceptable erosion assessments include:

- Existing reports that include an erosion rate estimate.
- Site evaluation by a registered engineer, or water resources specialist.
- Long period, low altitude aerial photography can be compared to ascertain shoreline movement. However, long-period adequate scale aerial photography is often not available. Many river shore and coastal shoreline areas are subject to dramatic short-term changes, often measuring several hundred feet in major storms or during a high water season. Modeling to depict impact on recession rates has not been developed.

In determining how large a setback to adopt, or how stringent building design and construction standards should be, or whether structural erosion control measures are needed, accurate hazard delineation is needed. Erosion hazards data should meet three tests: 1) Data should be realistic (tested against academic models and/or past experience); 2) Data should be available for use (not too costly to secure or too time-consuming to generate or use); 3) Data should be legally defensible. This standard does not require perfection, but it does require reasonable accuracy.